Safety Advisory Committee
April 16, 2010
10:00 AM – 12:00 PM

Minutes

Committee Member	Representing	Present
Anderson, Erik	Materials Sciences Division	
Bello, Madelyn	Human Resources Advisor	X
Blodgett, Paul M.	Environment, Health and Safety Division	X
Cademartori, Helen	Information Technology Division	X
Christensen, John N.	Earth Sciences Division	X
Earnest, Thomas N.	Physical Biosciences Division	
Floyd, Jim	Safety Advisory Committee Chair	X
Fujikawa, Brian	Nuclear Science Division	X
Ji, Qing	Accelerator & Fusion Research Division	
Lukens Jr., Wayne W.	Chemical Sciences Division	X
Lunden, Melissa	Environmental Energy Technologies Division	
Madaras, Ron	Physics Division	*
Martin, Michael C.	Advanced Light Source Division	X
More, Anil V.	Office of the CFO Advisor	
Patterson, Pam	Public Affairs Advisor	
Pollard, Martin	Genomics Division	X
Taylor, Scott E.	Life Sciences Division	X
Tucker, Eugene	Facilities Division	X
Thomas, Patricia M.	Safety Advisory Committee Secretary	X
Walter, Howard	Computing Sciences Directorate	
Wong, Weyland	Engineering Division	X

Others Present: Brandon DeFrancisci, Joe Dionne, John Heim, Julie Henderson, Michael Kritscher, Susan Broadway (for Peter Lichty), Don Lucas, Robert Mueller, *Marty White (for Ron Madaras)

Chairman's Comments – Jim Floyd

- The meeting schedule was discussed. The consensus was to keep the third Friday, 10AM – noon meeting time for now. The lbl.gov/doodle feature can be used to conduct polls.
- There was not enough time to discuss space issues this month. 5 divisions provided feedback that space was an important issue for them. We will plan to discuss it next month. There are many sub-issues: waste management, ergonomics, communications, emergency response, etc. The plan for Earth Sciences has changed – they will not be moving to Bldg. 70A. They may be moving to Bldg. 32 and 74.
- The second most important issue category, mentioned by 4 divisions, was electrical safety. The non-Nationally Recognized Testing Laboratory equipment

inventory and inspection program seems to be progressing well. Lockout / Tagout (LOTO) training has been improved. The number of people performing LOTO has been reduced because of the training requirement. There are still difficulties in complying with the electrical Activity Hazard Document (AHD) policy. Engineering, Advanced Light Source, and Accelerator & Fusion Research are struggling with it. The AHD format does not work well for describing and authorizing a diverse set of work activities. It is difficult to define the scope. The Work Planning and Control system may provide a better solution; however, it may be too far off. A solution is needed now. Facilities Division is using an alternative job-based approach. This approach does not work for Engineering Division electronics technicians. There is a Qualified Electrical Worker Program that has procedures, training, and defined envelopes for hazard classes. The Department of Energy (DOE) will be adopting a new Electrical Safety Handbook with hazard classes and work controls. A meeting will be scheduled with the Accelerator and Fusion Research Division, Advanced Light Source, Engineering, and Environment, Health, and Safety (EHS) Division representatives to continue to work on the issue.

Safety Culture – Doug Fleming

Doug Fleming showed the Safety Advisory Committee (SAC) the presentation he gave at the recent Division Directors' retreat. Safety has a lot of visibility at LBNL. Paul Alivisatos has identified "safety and efficiency" as one of his major initiatives for LBNL. Until recently, Division Directors heard more about the "efficiency" part.

Improving safety culture is a transformative process. A culture is the product of group and individual values, perceptions, attitudes, and competencies. The Bradley Curve concept from DuPont shows how organizations' safety culture can progress through stages.

There are several reasons for improving safety culture. We want to keep people safe. DOE is focused on striving for zero injuries. The accident rate tends to plateau once basic reactive compliance/corrective action measures are in place and we must change behavior and culture to achieve the next level of performance. We need to learn how to measure and reward proactive efforts. Safety must be connected to Lab goals. There is a saying that "culture eats strategy for lunch". 90% of actions are invisible and guided by culture. For example, if we see safety glasses being put on whenever the safety person or supervisor appears, then routinely wearing PPE is not part of the safety culture. Leadership needs to be in alignment with the safety values and act according to what we say.

Some of the signs of a positive safety culture include:

- Analysis before blame
- Use of leading indicators (systems approach)
- Recognition and reward of safe behaviors
- Workforce "ownership" of safety

- Communication (suggestions, best practices, lessons learned from near hits)
- Modeling safe behavior
- Challenging unsafe acts.

Transformation is continuous. There is no end point. We can always get better. Safety culture is not a temporary "initiative" nor a fixed program or procedure. Technical controls can only improve safety so far. We need to maintain our technical controls while adding ESH culture improvement.

The "Bradley Curve" was developed by Vernon Bradley in the DuPont Discovery Group in 1994. It defines several stages of evolution in safety culture improvement:

1. Dependent – command and control;
2. Independent – actions self-driven, belief in doing the right thing, but not consistent (zero by chance); and
3. Interdependent – working as a team, zero by choice.

The Bradley Curve is similar to the Stephen Covey self-improvement system. The improvement process includes assessing the current system, envisioning the desired state, developing a plan, implementing the plan, and sustaining the improvements. DuPont has experience in this process and information to help other organizations do it right. There is a 12-element survey tool for the assessment process that includes factors such as leadership, structures, processes, and actions. The best organizations usually have an off-the-job safety program. Off-site injuries (driving, ladder safety, etc.) impact employees' ability to work. LBNL has different levels of safety culture in different areas, and we are better in some aspects than others. The assessment tools provide diagnostics and recommendations. Some parts of DuPont achieved 60% improvement in accident rates from implementing the system.

Doug Fleming recommended that the SAC form a Safety Culture Improvement Subcommittee. Human Performance and Behavior-Based Safety tools can be used as part of the framework. Paul Alivisatos will be the champion and sponsor. The resources and contract are in place.

A general discussion among SAC members followed the presentation:

- Communication barriers, particularly the difficulty of finding the information needed, creates a barrier to independence at LBNL.
- We will need to conduct a gap analysis, and develop ways to measure progress. It will take time to achieve noticeable improvements. It will be important to keep workers informed.
- There was a suggestion that it would be helpful to invite Chevron people to talk about their experience.
- We will need both visible top-down support and bottom-up buy-in to be successful.
- There must be a partnership between researchers and EHS. We will need to continuously solicit feedback as we move forward.
- Every Division will participate. A smaller subcommittee will be needed to steer the effort.

- Culture is central to all other efforts. Progress has leveled off.
- Communications has been an issue in recent incidents. We should make better use of modern information technology tools.
- The response to the Health, Safety and Security (HSS) audit has been difficult, partly because of cultural factors.
- SAC members were urged to get involved by contacting Jim Floyd and talking to their Division Directors. We will need Division Director involvement and accountability.
- The constant turnover of the Lab population (guest, visitors, students, users) requires a team enforcement approach. Groups vary in their attitudes and compliance behavior, and new people tend to adopt the safety culture of their work group. Language barriers, cultural differences, and the wide range of ages in our population can make communication a challenge.

Work Planning and Control – Scott Taylor

The HSS auditors did not like the work planning process and advised LBNL to replace the Job Hazards Analysis system. A benchmarking team looked at work planning and control systems at 5 other National Laboratories. They realized that a single process would not work for everyone at LBNL. There are several distinct work categories:

- Research;
- Office-type work;
- "Non-resident" work release for matrixed people working in other areas;
- Subcontractor work.

Getting work planning and control right for research work will be key. The concept is activity-based authorizations that will define activities, define controls, and assign people. We would like to have a "one-stop shop" that builds in the information contained in Activity Hazard Documents, Biological Use Authorizations, various radiation work authorizations, etc. The system needs to be able to interact with other databases (Chemical Management System, Hazards Management System, etc.) to both query them for information and be able to populate them. The system should be able to identify other hazards in the space and provide information about them. The database should be a tool that facilitates hazard assessment and communication. The Principal Investigator (PI) would identify activities, select hazards from a drop-down list, select the level of hazard, and review and edit a list of guidance and controls. The PI can add specific information, such as the type of gloves and local communication systems. The PI would then assign personnel and determine their proficiency.

Access Control – Don Lucas

Howard Walter will be leading the Access Control subcommittee. The ALS system is scheduled to be running by June 30. This is a target, not a hard deadline. One location is being implemented at a time. Information Technology (IT) is building the capability and EHS Division will be administering the links to training requirements. We are starting with locations where the infrastructure exists. IT is working on dependent prerequisites

to make the system work. There have been some unexpected complications. One problem has been the reliability of integration between badging and Human Resources. The policies and processes for on-boarding new people are not well documented. Some hardware upgrades were needed. Nuclear Science Division (NSD) and Materials Sciences Division (MSD) will be pulled into the access control system soon.

Chemical Safety – Larry McLouth

The members of the Chemical Safety Subcommittee are:

- Vince Battaglia (Environmental Energy Technologies Division)
- Jerry Bucher (Chemical Sciences Division)
- Rick Kelly (Materials Sciences Division)
- Tracy Mattox (Materials Sciences Division)
- Scott Taylor (Life Sciences Division, Chair)
- Larry McLouth (EHS, Subject Matter Expert)

They have been working on a proposed upgrade to the Chemical Hygiene and Safety Plan, labeling and storage sections and requirements for storage, treatment, and disposal of mixtures that produce pressure. The next issues they plan to tackle include:

- Triggers for chemical AHDs;
- Chemical safety training alignment with work hazards – baseline training and modules for different hazards;
- Nanomaterial controls.

The AHD and training requirements will evolve with the Work Planning and Control system. Identifying hazards, selecting controls, and completing formal and on-the-job training should be ongoing activities.

The meeting was adjourned at 12:00 PM
Respectfully submitted, Patricia M. Thomas, SAC Secretary